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ABSTRACT

This report describes a group of demonstration projects for the provision of early childhood development services in 14 Texas communities (mostly rural) and evaluates their activities from a cost-benefit perspective. The 3-year state-funded program was designed to determine how well such projects could generate additional non-state funds from existing resources. Projects providing comprehensive day care services (including child care, health care, parent education and social services) involved approximately 1,670 children, and programs specializing in health services reached more than 1,800 children. Detailed descriptions of individual projects are presented in the appendix. The cost-benefit analysis was based on two major sources: (1) expenditure figures from each project for a typical quarterly operational period; and (2) a random sample of 20 percent of the parents in each project to determine income changes for families receiving child day care services through the demonstration projects. Analysis indicated that state dollars expended on day care in the demonstration projects were effective in generating non-state funds for child and family services. Family income of those receiving project day care services increased, with a corresponding decrease in state assistance payments. When state costs for day care were adjusted to benefits accrued, the actual state share appeared to be only 17 percent of total day care costs. Health benefits for children in the demonstration projects were estimated to far outweigh the amount spent on health care. (BF)

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EARLY CHILDHOOD DEVELOPMENT PROGRAMS IN TEXAS: AN ANALYSIS OF BENEFITS AND COSTS

by

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A B S T R A C T

Early childhood development services, including comprehensive day care and health care services in projects funded on a demonstration basis are described in this report, and analyzed from a benefit-cost perspective. The study attempts to determine how well the demonstration projects can generate additional funds through effective planning and coordination from resources already available.

The analysis indicates that state funds expended on day care and health care services provide an efficient use of state dollars. In addition to benefits to the families and to the young children whom the projects serve, the state derives direct and indirect benefits in funding such projects.

First, it appears that money spent by the state has had a compounding effect on total resources devoted to day care. On the average, for each dollar expended on day care services, $3.08 of non-state resources have been generated. State funds used for direct (i.e. child care, health care, and parent education) and indirect (i.e. planning, training, reporting, and coordination) day care services financed only 32 percent of total expenditures. The remainder was funded by already available federal funds and local public and private resources.

Second, the analysis indicates that the income of families whose children received day care through the demonstration projects rose on the average by $1,265 or 32 percent over a nine-month period, according to a 20 percent random sample of parents taken in March, 1975. Most of the families sampled had enrolled their children during the nine-month period. When projected over the

total number of families in the demonstration projects and compared to state expenditures during that period, the ratio of family income increase to state expenditures for child care is 1.86 to 1; that is, for every dollar of state money expended, family income rose $1.86.

Third, with the increase of family income, there was a corresponding decrease in AFDC and Medicaid assistance payments by the state for an estimated 14 percent or 138 families going off welfare. This savings to the State was added to the revenues from sales tax generated by an increase in community income (i.e. resulting from income rise to parents and from local employment of staff by the projects), producing a fiscal return to the State of $298,691. Comparing state fiscal benefits to state fiscal costs yielded a return to the State of 48 cents for each dollar expended on day care services.

Fourth, when costs to the State for the day care projects are adjusted by the benefits accrued, the actual state cost for day care services appears to be 17 percent; that is, of every dollar expended on day care, the State paid only 17 cents.

Finally, health benefits to children in the demonstration projects were estimated on the basis of the present value of income-loss avoided and treatment costs avoided as a result of the preventive health services provided by the projects. It was found that for each state dollar expended by the demonstration projects for health care, $8.44 in health benefits was provided to project recipients.

I. INTRODUCTION

In 1973, as a part of a three year study, the Office of Early Childhood Development, a division of the Texas Department of Community Affairs, funded a group of demonstration projects in early childhood development. The purpose of the projects was to show how Texas communities, mostly rural, could effectively provide a variety of early childhood development services to children and their families through planning and cooperation at the local community level. This report briefly describes the activities of the demonstration projects, evaluates the activities from a benefit-cost perspective, and highlights some especially interesting features of the projects.

Child care as offered through the Office of Early Childhood Development demonstration projects with the excellent cooperation of the Texas Department of Public Welfare and other agencies, is intended to help fill the gap in early childhood services available to Texas families. A rising number of Texas mothers with children under six are working. Many of them have taken on joint wage earning roles with their husbands while others provide the sole family support. It is becoming increasingly difficult for them to find quality day care at a cost they can afford, at a location convenient to home or office, and at hours that fit their job schedules. The 1970 census data reveals that of all Texas mothers with children under six, 34 percent or 268,000 are in the labor force. As a result, 443,000 Texas children under six have mothers who work. This potential need for day care is not being met by the 108,000 licensed day care spaces presently available in the state.

The above statistics emphasize the fact that the need for day care for working mothers is high. Why hasn't this need been met through the public and private sectors? For some families private day care is available, and for an even smaller number, some public day care is also provided. Most of the 108,000 licensed day care spaces mentioned above are filled by the private sector. However, commercial charges for day care are beyond the means of many Texas families. Further analysis of the 1970 census figures indicates that among all Texas families with children under six, 28 percent are in poverty and another 26 percent are in near poverty. Among one-parent families with children under six, 65 percent are in poverty and an additional 23 percent are in near poverty. The children in many of these families are not receiving the care they need because public day care is not readily available, particularly in the rural areas of the state, to those whose family income is too low to take advantage of available private services.

In addition to need for day care for working mothers, there is increasing recognition that children benefit from early education and group experiences. School failure, emotional disturbance and other problems are being traced to conditions in the first six or eight years of a child's life. Publicity about children and youth in Texas institutions has heightened interest in preventing health and behavioral problems <u>before they occur</u>. The Office of Early Childhood Development projects attempt to meet these needs by providing child care programs which include health, educational, and social components.

II. THE OFFICE OF EARLY CHILDHOOD DEVELOPMENT SPECIAL PROGRAMS

The fourteen demonstration projects under analysis are located throughout the State. Eight of the projects are so-called "county projects" and were selected on the basis of needs reflected by fourteen statistical indices including infant death rate, number of children under six and median per capita income. The first step in setting up the county projects was to select a steering committee in each county made up of parents, public officials, social workers, representatives of child care centers and churches, and others concerned with young children. Each county then studied children's needs through public meetings, house-to-house surveys, and officials' records. Resources and existing services in the county also were explored.

Following the needs assessment and resource exploration stages, each of the county projects developed a program plan explicitly stating their objectives and the means by which the objectives would be achieved.

In addition to the eight county projects, the Office of Early Childhood Development awarded funds to six other sites showing promise for achieving community cooperation in meeting the needs of young children. These so-called "special projects" reflect the interest that OECD has in responding to initiatives from local agencies. The selection of the special projects was made on the basis of: 1) the adequacy of the proposed program to respond to community early childhood development needs; 2) an indication of local support for the early childhood development program proposed; and 3) the promise of funds by other agencies, to match the grant from OECD.

The projects were not designed to minimize costs at the expense of quality child care, but one of their objectives was to minimize new state costs through the coordination of already available resources. With technical assistance provided by the Office of Early Childhood Development, and through the help and cooperation of the Department of Public Welfare, each project was encouraged to integrate Title IV-A day care funds, Title XIX health funds, federal Manpower Training Services, HUD social service funds and all available local resources into their programs. The results thus far seem to indicate that limited state dollars have generated a large amount of non-state resources for the care of Texas children, and that state and local agencies have begun to work together in a cooperative effort to fill existing gaps and to provide needed services to children and their families.

For the past year and a half, the county and special demonstration projects, with a small amount of State seed money and through careful planning and coordination of existing resources at the community level, have been able to provide early childhood development services at relatively low cost to parents and to the State.

Taken as a whole, the projects provide services in 12 Texas counties as well as the 26-county Texas Panhandle region. Comprehensive day care services, including child care, health care, parent education, and social services are available in 32 centers and 20 family day homes, serving approximately 1,670 children. In addition, three of the projects specializing in health services (including physical, dental and psychological screening and referral and limited health treatment), have served more than 1,800 children in

three health centers; provided approximately 120 expectant mothers with parental education and social services in pre-natal clinics; and provided training and consultation to more than 450 parents in health care and health education of their young children.

Other activities of the demonstration projects have included a census gathered on approximately 7,000 pre-school children in Fort Bend County to learn about health and developmental problems; the involvement of more than 800 parents in parent training programs and parent counseling; and completion of a one year on-the-job training program with certification as Child Care Specialist Aides by 58 trainees in the Panhandle area. The projects have coordinated these and other activities with more than 130 representatives of local, state and regional agencies and organizations throughout the State. A more detailed description of each project is presented in the Appendix of this paper.

As stated earlier, this is a three-year demonstration. The OECD funding for these projects will run out August 31, 1975.

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III. BENEFIT-COST ANALYSIS DESIGN

The benefit-cost analysis of the demonstration projects is based on two major sources of data. In an on-going formative evaluation of the projects by the Office of Early Childhood Development, project expenditures are submitted on a quarterly basis. These reports give detailed cost information on expenditures for direct services (child care, health care, parent education) and indirect services (planning, training, reporting and coordination). Each of these service areas are broken down into personnel, travel, supplies, equipment, and other expenditures. For this study, expenditure figures from each demonstration project for a typical quarter's operation (i.e. September - November, 1974) were used to determine the cost of providing day care and health care services to project recipients.

The second source of data for the analysis is a random sample of 20 percent of the parents in each project, taken in March, 1975, to determine income change of families whose children received day care services in the demonstration projects.

Due to time and money constraints, OECD evaluation staff did not themselves select a random sample of parents at project sites. Instead, local project directors were carefully instructed by evaluation staff on the telephone regarding the importance of sample randomization. Specific instructions were then given to the directors to select a particular number from their rolls of parents (or if rolls were not available, directly from the files) and to pull the file of every fifth or sixth parent (or whatever number was necessary to total a 20 percent sample, not starting with the first). Requested information on the past and current income status

of the parents whose files were selected was then transmitted by phone to the evaluation staff. Such randomized sampling does not completely preclude an accidental selection bias; however, it was felt that a sample was generally indicative of the projects' average parental income status.

In the analysis, selected benefits to Texas children, their families, and the state are calculated and compared to project expenditures to measure the "effectiveness" of state dollars spent for child care.

Deriving dollar estimates of the benefits provided by the projects is a difficult task. It is impossible to assign figures to all benefits, both direct and indirect, short and long-term. Many important project benefits (considered the most important by some) are of a qualitative nature and cannot be analyzed from a benefit-cost perspective. Nevertheless, in this study, selected benefits in four areas are defined and estimated.

IV. DEFINITIONS OF PROJECT BENEFITS AND COSTS

In the first area of measuring benefits of demonstration projects, an attempt was made to determine the degree to which state money (the OECD contribution) expended on child care services maximized services provided and minimized costs to the state. Benefits are defined here as non-state dollars generated for day care services for each state dollar expended. In other words, the study attempts to determine how well the demonstration projects can generate additional funds through effective planning and coordination from resources already available.

Costs are defined here, and in the second and third areas described below, as those expenditures of state funds for all components of a child care program including direct (i.e. child care, health care, parent education) and indirect (planning, training, reporting, and coordinating) day care services.

The second area of benefits deals with economic benefits to Texas families whose children are provided day care by the demonstration projects. Benefits to the economic well-being of Texas families are defined here in terms of the family income change that occurred during the period in which day care was provided. The ratio of the family income change to state expenditures on day care services provides an estimate of the family income change associated with each state dollar spent on day care services.

A third area of benefits deals with the savings to the state for decreased AFDC and Medicaid assistance payments and an increase in State sales tax revenues generated as a consequence of the family income rise and as a result of demonstration projects hiring

staff. The ratio of these fiscal state benefits to fiscal state costs gives an estimate of the return to the state on each dollar spent on day care services.

Finally, direct health benefits to children are estimated on the basis of the present value of income-loss avoided and treatment costs avoided as a result of the preventive health services the children in the demonstration projects have received. The ratio of the present value of these benefits to project health care expenditures provides an estimate of the long-term health benefits derived from each dollar spent in the projects for health care. Costs in this last area of benefit-cost analysis are defined as state dollars expended on health care for demonstration project recipients.

V. ANALYSIS OF RESULTS

In analyzing the benefits to the State in terms of non-State funds generated by demonstration projects, it was found that only 32% of total expenditures for day care services came from State funds. Federal funds financed 60% of the projects' expenditures; the remaining 8% was provided by local donations of physical facilities, volunteer time and donated monies. Overall, $3.08 of non-State funds were generated for each State dollar expended.

Cost data from project expenditure reports submitted to OECD break out not only functional expenditures, but also their source (OECD, federal, local donated, other). Benefits to the State derived from planning and coordinative activities in each project are reflected in the amount of non-OECD expenditures reported each quarter.*

Table 1 (page 11) presents the number of children to whom day care was provided and total day care expenditures. The wide range of per child expenditure shown in columns 3, 4, and 5 reflects the diversity of project activities offered as well as differences in project efficiency and performance. The last two columns in Table 1 give the percent of total expenditures for indirect services and direct services. On the average, for each

* In those cases where projects are reimbursed for their expenditures of OECD monies for current AFDC recipients through DPW Title IV-A funds, a 30% state match from DPW is included with the 70% federal match. However, the 30% of OECD (i.e. state) monies which were originally expended and later replaced by DPW are then carried over for future state match and recorded as such. Thus, the OECD expended figures as reflected on the quarterly reports account for all state monies actually expended during that quarter.

TABLE 1

DAY CARE PROJECT EXPENDITURE

Demonstration Project	(1) Number of Children Served	(2) Total Exp. For Typical Quarter Sept. - Nov. '74	(3) Total Exp. Per Child For 1 Qtr.	(4) Total Exp. Per Child For 1 Day	(5) Total Exp. Per Child For 1 Yr.	(6) Percent Indirect[1]	(7) Percent Direct[2]
Falls County Parent-Child Centers	118	$41,973	$ 355	$ 5.91	$ 1,420	26	74
Houston County ECD Program	60	34,402	573	9.55	2,292	38	62
Lamar County ECD Program	170	39,360	232	3.86	928	12	88
Polk County ECD Program	45	47,742	1,061	17.68	4,244[3]	21	79
San Patricio County ECD Program	67	23,413	350	5 83	1,400	45	55
T.P.E.C.D.T.P.	360	117,782	327	5.44	1,308	31	69
Coastal Bend Migrant Council Day Care	42	25,005	596	9.93	2,384	40	60
Colonias del Valle ECD Program	60	29,751	496	8.26	1,984	11	89
Corpus Christi ECD Center	60	43,524	726	12.09	2,904	42	58
El Paso YWCA Community Day Care Project	425	212,992	501	8.34	2,004	25	75
Project Imagine	20	23,176	1,159	19.31	4,636[4]	25	75
TOTAL PROJECTS	1,427	$639,120	$ 447	$ 7.45	$ 1,788	28	72

1 Percent of total expenditures for planning, training, reporting, and coordination services.

2 Percent of total expenditures for child care, health care, and parent education services.

3 Possibly an overestimate due to an accounting difficulty with breaking out day care dollars in POLK COUNTY.

4 Reflects the high cost of infant care.

dollar spent on child care, 72¢ was spent directly on children or parents, and 28¢ was spent for indirect activities including planning, training, reporting, and coordination.

Although the overall unit expenditure figures for the demonstration projects are competitive with corresponding figures reported in other studies, it is clearly evident that day care is an expensive undertaking. However, in Table 2 (page 13) a breakdown of total expenditures by their source (as opposed to use) shows that in each project the state did not have to pick up the entire bill. Each of the columns in the table breaks out total quarterly expenditures by the expenditure source. Because of other resources acquired for project activities, OECD expenditures made up only 32% of total expenditures (see column 2, TOTAL PROJECTS). The Federal government expenditures which included Title IV-A funds, Title XIX health funds, Labor Department Manpower Funds and HUD community development funds financed 60% of the projects' expenditures. The remaining 8% of project expenditures were provided by local donations of physical facilities, volunteer time and money. In the final column of Table 2, total project expenditures are divided by OECD expenditures to get an estimate of the number of total dollars spent in the projects for each dollar spent by OECD. Overall, $3.08 (see final column, TOTAL PROJECTS) of non-OECD funds were expended for every dollar of OECD funds. In other words, OECD dollars had a compounding effect on total resources devoted to day care.

The statistics shown in Table 1 and 2 indicate that state dollars spent on day care in the demonstration projects in fact have generated non-state funds for children. What the tables do not show are the direct benefits to the children's development derived from the services they were provided. To estimate these benefits would require a more sophisticated study than the present effort.

It is generally assumed that furnishing day care to young children provides an opportunity for their parents to work if they so desire. Many, though not all, of the demonstration projects serve predominantly poverty or near poverty level families receiving government assistance. A good number of the children in the projects come from single-parent families. Thus, if day care services provided to these families are associated with family income rising by an amount equal to or greater than the day care cost, the services could be justified in a pure benefit-cost sense. Any income increase would benefit not only the families, but also would save state dollars in those cases where government assistance has been provided.

In a random sample of 20 percent of the parents in each project taken in March, 1975, sample results showed that on the average, the income of families whose children received day care in the demonstration projects rose $1,265 or 32% over the preceding nine-month period. Over all the day care projects, family income rose $1.86 for every state (OECD) dollar expended.

Table 3 (page 16) presents past and current family income figures gathered from each project. Most of the families sampled had enrolled their children during the nine-month sample period. Of a total of 985 families, 200 were sampled, and for all projects but one, family income rose significantly during this period. An estimate of total family income rise was calculated by multiplying the sample average family income rise by the total number of families receiving day care in the projects (see column 5 of Table 3). An estimate of the family income change associated with each state dollar spent on day care was derived by dividing average family income change for all day care projects by total OECD (i.e. State) expenditures. In column 6 of Table 3, OECD expenditures for the nine-month period (computed by multiplying the September - November, 1974 expenditures) are presented. By dividing the family income increase by total state (i.e. OECD) expenditures, the income increase per state child care dollar spent is $1.86, or a benefit-cost ratio of 1.86 to 1.

Caution must be taken, of course, in drawing cause and effect relationships from these figures. Many factors may have partial effect on income increases. Sampling bias, inherent in any sampling procedure, must also be kept in mind, and particular situations or unique circumstances are not representative of the overall results. However, it is interesting to note that there was a substantial overall rise in the income of parents sampled, and this rise occurred during a period in which the economy was heading for a serious recession.

TABLE 3

INCOME BENEFITS TO FAMILIES OF CHILD CARE CENTERS

Demonstration Project	Avg. Annual Income 9 Months Ago	Current Avg. Annual Income (Mar., 1975)	Avg. Income[1] Change Over 9 Months	No. of Families in Project	Total Family Income Rise	Nine Mos. OECD Day Care Expend.	Benefits Costs[2]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Falls County Parent-Child Centers	$2,916	$5,522	$2,606	90	$234,540	$33,375	7.03/ 1.00
Houston County ECD Program	3,543	3,748	205	35	7,175	39,973	.18/ 1.00
Lamar County ECD Program	6,225	7,387	1,162	145	168,490	84,444	2.00/ 1.00
Polk County ECD Program	3,255	2,743	- 512	40	- 20,480	60,626	-.34/ 1.00
San Patricio County ECD Program	3,455	5,687	2,232	40	89,280	48,732	1.83/ 1.00
T.P.E.C.D.T.P.	5,230	7,095	1,865	200	373,000	42,309	8.82/ 1.00
Coastal Bend Migrant Council Day Care	3,686	5,297	1,611	30	48,330	22,197	2.18/ 1.00
Colonias del Valle ECD Program	2,103	2,895	756	50	37,800	16,215	2.33/ 1.00
Corpus Christi ECD Center	3,000	4,000	1,000	35	35,000	36,450	.96/ 1.00
El Paso YWCA Community Day Care Project	3,340	3,940	600	300	180,000	77,139	2.33/ 1.00
Project IMAGINE	3,000	3,377	377	20	7,540	13,287	.57/ 1.00
TOTAL PROJECTS	$3,904	$5,169	$1,265	985	$1,160,675	$621,600	1.86/ 1.00

1 Mean income change for random sample of 200 families.

2 Benefits - average income change over nine months; Costs - total OECD (state) day care expenditures for nine months.

In the third area of analysis, attempts were made to measure indirect economic benefits to the State from savings in decreased AFDC and Medicaid assistance payments of working parents and increased state sales tax revenues generated as a consequence of family income rise and employment of project staff.

As a result of the family income rise discussed above, state dollars expended for AFDC assistance decreased during the sample period. An estimated 138[1] families went off welfare, with a resulting savings to the State of $40,774 in AFDC payments and $29,187 in Medicaid payments.[2]

Table 4, column 1 shows the estimated total family income rise in demonstration projects to be $1,160,675. It was calculated by multiplying the sample average family income rise by the total number of families receiving day care in projects.

Local employment income rise was derived by calculating the salaries from the jobs created within the projects themselves. On the average, 72¢ of every dollar spent in the projects goes to pay the salaries of local child care workers. For the same nine-month period in which family income rose $1,160,675, local employment income provided in the projects was $1,380,765 (see Table 4, column 2).

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[1] In 14% of the families sampled, income rose beyond the maximum for assistance for each family size category. The estimated 138 families represent 14% of the total families in the projects.

[2] 138 Families X 109.34 (1974 Average Monthly Family AFDC Payment) = $15,089 X 9 Months = $135,801 X .30 (1974 State Percent of AFDC Payment) = $40,774.
138 Families X 23.50 (1974 Average Monthly Family Medicaid State Payment) = $3,243 X 9 Months = $29,187.

TABLE 4

STATE REVENUES GENERATED
(Nine-month Period)

	Total Family Income Rise	Local Employment Income Rise	TOTAL	Total Local Multiplied Income Rise[1]	State Sales Tax Revenues Generated[2]
	(1)	(2)	(3)	(4)	(5)
Falls County Parent-Child Centers	$234,540	$ 92,142	$ 326,682	$2,450,115	$ 29,401
Fort Bend County ECD Program	No Day Care	24,654	24,654	184,905	2,219
Houston County ECD Program	7,175	68,043	75,218	564,135	6,770
Lamar County ECD Program	168,490	50,490	218,980	1,642,350	19,708
PEDIA		24,480	24,480	183,600	2,203
Polk County ECD Program	-20,480	85,137	64,657	484,928	5,819
San Patricio County ECD Program	89,280	30,894	120,174	901,305	10,816
Starr County ECD Program	No Day Care	23,778	23,778	178,335	2,140
T.P.E.C.D.T.P.	373,000	243,174	616,174	4,621,305	55,456
Coastal Bend Migrant Council Day Care	48,330	59,214	107,544	806,580	9,679
Colonias del Valle ECD Program	37,800	54,969	92,769	695,768	8,349
Corpus Christi ECD Center	35,000	94,284	129,284	969,630	11,636
El Paso YWCA Community Day Care Project	180,000	489,780	669,780	5,023,350	60,280
Nacogdoches Project Imagine	7,540	39,726	47,266	354,495	4,254
TOTAL PROJECTS	$1,160,675	$1,380,765	$ 2,541,440	$19,060,801	$228,730

[1] Income multiplier = 7.5. Based on San Antonio study of 1971 economic impact of diptheria epidemis, Special Problems In Texas Concerning Diseases Preventable By Immunization, the Special Senate Committee on Disease Prevention by Immunization.

[2] Sales tax rate = 1.2%. Based on percent income deduction for sales tax, 1974 IRS tax tables.

Total income from the projects in the last nine months is derived by adding family income rise to local employment income.[1]

The initial income increase by individuals in the community will produce further income increase to other members of the community as people spend their newly acquired funds. Using an income multiplier of 7.5,[2] a figure can be derived for the estimated total community impact on income associated with project activities (see Table 4, column 4). The estimated sales tax revenues generated for the state by this increase in community income is substantial, as shown in column 5, Table 4. These dollars provide a $228,730 fiscal return to the state.

To compare state fiscal benefits to state fiscal costs, the benefits derived from sales tax revenues associated with project employment and income rise, AFDC dollars saved, and Medicaid dollars saved are compared to State project expenditures (i.e. OECD expenditures).

In Table 2, column 2 (see page 13), a total figure was derived for state (OECD) expenditures for a typical quarter. Multiplying this figure by three (for a comparable nine-month period) would produce the total state fiscal costs (i.e. OECD expenditures), or $621,600. Dividing State fiscal benefits by State fiscal costs

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[1] There is a chance of some duplication here since a portion of the family income rise may be due to parents being employed by the projects; however, this is a minimal portion of the total estimated income rise.

[2] Income multiplier = 7.5. Based on San Antonio study of 1971 economic impact of diptheria epidemic, Special Problems in Texas Concerning Diseases Preventable By Immunization, the Special Senate Committee on Disease Prevention by Immunization.

yields the return to the State on each dollar spent.[1] Thus, state expenditures which funded only 32 percent of the cost of all the services in the day care projects, yielded 48 percent to the state in fiscal savings and generated revenues. In other words, if the absolute state cost is adjusted by the benefit accrued, the actual state cost for child care services would appear to be only 17 percent.

The final area of analysis deals with the costs and benefits of health services provided by the projects. Three of the projects in Fort Bend County, Starr County and Navarro County provide extensive health screening, referral and treatment services. The remaining projects, which are primarily day care, also provide health care services, including screening, referral, immunizations and limited treatment. The screening includes vision, hearing, dental, medical and, in some projects, psychological exams.

The health expenditures per child for all the projects for a typical quarter are presented in Table 5 (page 21). The per child expenditure of $27.33 for the months of September, October and November, 1974, represents a simple arithmetic mean and does not reflect the wide range of expenditures on a case by case basis. Estimated health benefits per child are calculated on the basis of the percent value of income loss and treatment costs

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[1] Fiscal benefits: $298,691 (sales tax revenues of $228,730 and savings in AFDC and Medicaid payments of $69,961); fiscal costs: $621,600 (OECD expenditures); benefits/costs: $\frac{\$298,691}{621,600}$ = $.48 or a return of 48 cents on every dollar spent.

TABLE 5

HEALTH CARE COSTS OF THE SPECIAL PROGRAMS

Total Health Expenditures	$38,810
Number of Children who Received Health Care	1,420
Total Health Expenditures Per Child	$ 27.33

TABLE 6

HEALTH BENEFITS

	Vision Defects	Hearing Defects	Unmet Dental Needs	Congenital Malformations
PV of Lifetime Earnings of Child 1-4 - $128,100[1]				
% Income Loss From Various Infirmities[1]	20%	15%	5%	25%
% Probability of Infirmities for Children 1-4[1]	0.24%[2]	0.08%	1.3%	0.22%
PV of Earnings Loss Avoided for Various Infirmities	$61.49[3]	$15.37	$83.27	$70.46
PV of Treatment Cost Avoided from Various Infirmities[1]	NA	$ 2.43	NA	$16.72
Total Benefits Per Child	$230.59	Income Loss + Treatment Cost Avoided = $230.59[4]		
Benefit/Cost = $\frac{\$230.59}{\$\ 27.33}$ = $8.44				

[1] Department of Health, Education and Welfare, Maternal and Child Health Care Program, October, 1966, Washington, D.C.
The present value of lifetime earnings was calculated using a social discount rate of 3% and was adjusted for inflation and productivity change since 1966.
The present value of treatment costs was adjusted for inflation since 1966.

[2] The percent probability of one child contracting the disability.

[3] For example, $128,100 X .20 X .0024 = $61.49 per child.

[4] The sum of Income Loss Avoided + Treatment Cost Avoided for each infirmity (Row 4 + Row 5).

avoided as a result of the preventive health services provided to the children in the three-month period (See Table 6, page 21). To calculate the benefits of health services provided, the present value (PV) of expected lifetime earnings is multiplied by the percent income loss resulting from various infirmities. This figure is then multiplied by the per child probability of contacting the infirmity to get the expected benefit per child. Summing the per child benefits for all infirmities and dividing this total by health expenditures results in a dollar estimate of health benefits per dollar of health expenditures.

Thus, the total health benefits per child are estimated at $230.59, with total health costs of $27.33, for a benefit-cost ratio of 8.44 to 1. In other words, for each state dollar spent in the projects for health care, $8.44 in health benefits is provided.

This calculation is made on the assumption that the preventive measures provided to the children in the sample period are 100 percent effective. This is an overstatement, but does not overshadow the fact that the benefits to health care provided by the projects greatly exceed the expenditures.

IV. CONCLUSIONS

The above analysis indicates that state funds expended on day care and health care services in the OECD demonstration projects have provided an efficient use of state dollars. In addition to direct benefits to families and young children, there are significant direct and indirect benefits for the state:

(1) State dollars expended on day care in the demonstration projects have effectively generated non-state funds for services to children and families in Texas communities. State funds used for comprehensive day care services financed only 32 percent of total day care expenditures, with the remainder being funded by already available federal funds and local public and private resources. Over all the projects, $3.08 was generated from non-state resources for every dollar of state funds expended. In other words, state dollars had a compounding effect on total resources devoted to day care;

(2) In the demonstration projects which offered day care services, the income of families whose children received day care rose, on the average, by $1,265 or 32 percent over a nine-month period, according to a 20 percent random sample of parents taken in March, 1975. Most of the families sampled had enrolled their children during the nine-month sample period. When projected

over the total number of families in the demonstration projects, the ratio of family income increase to state expenditures for child care was 1.86 to 1; that is, for every dollar of state money expended, family income rose $1.86. From these results, it would appear that day care services can probably be justified in a pure benefit-cost sense. However, direct and indirect benefits to the state were also realized;

(3) State dollars expended for AFDC and Medicaid assistance decreased by $69,961 during the sample period discussed above for family income rise. In addition, local employment income increased by $1,380,765 through employment opportunities provided by demonstration projects. The total estimated sales tax revenues generated for the state by this increase and by total family income rise was estimated at $228,730. By adding the state savings for welfare assistance to the sales tax revenues generated by project activities, a total of $298,691 in state fiscal benefits is obtained. Comparing state fiscal benefits to state fiscal costs for day care projects, it appears that the state received a return of 48 cents on every dollar expended on child care services. Thus, state expenditures which funded only 32 percent of the total cost of all services provided in the day care projects, yielded a 48 percent return to the state in fiscal savings and generated revenues;

(4) When absolute cost to the state for day care projects is adjusted by the benefits accrued, the actual state cost for day care services appears to be only 17 percent of the total cost of all services provided;

(5) Estimated health benefits to children in the demonstration projects were also calculated and compared to the cost of health services. It was found that for each state dollar spent in the projects for health care, $8.44 in health benefits was provided to project recipients.

A P P E N D I X

THE OFFICE OF EARLY CHILDHOOD DEVELOPMENT DEMONSTRATION PROJECTS

COUNTY PROJECTS

FALLS COUNTY, a rural Texas area with a high incidence of poverty, was in need of additional child care. With funds from OECD, DPW, and other local agencies, approximately 120 children in the county are now receiving care that includes health, nutrition, educational and social services, and transportation. The largest center in Marlin serves 80 children, and two additional centers, in Rosebud and Lott, serve 20 children each.

The three centers probably have the most extensive resource pool of any program this size, and have effectively utilized the resources for young children in the county. The Western Institute for Science and Technology provides consultants for curriculum development and staff training. The WIST group also links the Falls County Program with other resources as needed. With cooperation from the Department of Public Welfare, a wide range of social services are provided to the families who have children in the centers.

FORT BEND COUNTY conducted a census of approximately 7,000 pre-school children to learn about health and developmental problems. As a result of its findings, the project now provides diagnostic and referral services and a parent education program. It is coordinating dental hygiene services with the Wharton County Junior College.

In Fiscal Year 1974, approximately 1,000 children were given complete physicals, referrals and limited treatment. Children whose parents requested it were given assistance with transportation and financial aid at a local health clinic in Rosenberg. The operating agency, Lamar Consolidated Independent School District, with cooperation from four other school districts in the county, provides a needed linkage between service-providing agencies and prospective clients.

The HOUSTON COUNTY Program expanded already existing day care operations to serve 60 children and infants. The project includes health and social services for about 20 teenage expectant mothers, children's health services, and a parent education program. Lift, Inc., and Houston County Child, Inc., operate the child care center at Crockett. All of the children receive direct health services, both medical and dental.

In Fiscal Year 1974, fifty children were examined and received appropriate referral for cardiac, orthopedic, dermatological, and dental evaluations. All parents entering their children in the program are counseled on the role they can play in the center's activities, including participation in the pre-natal workshop, baby-sitting workshop and attending parenting sessions on child care and health care.

LAMAR COUNTY created day care and pre-school enrichment programs, including testing and referrals for 170 children in five centers in Paris, Powderly, Chicota, and Sumner. Besides pre-school enrich-

ment, the center programs include parent education, health care and psychological services. Pre-school enrichment activities were provided in half-day sessions for the children. Health services include physical exams, visual, hearing and dental checks and psychological counseling. Parenting education is provided through group meetings and individual sessions.

The operating agency, Lamar County Government, has been successful in generating community support from such groups as the local Jaycees, who donated labor and materials for a model playground at the Oak Park Center in Paris. A summer swimming program for the children was made possible through the facilities provided by a local Holiday Inn.

PEDIA, the NAVARRO COUNTY Program, expanded a pre-natal clinic to serve approximately 130 pregnant mothers. Since the county had a high incidence of infant deaths, a pediatric nurse practitioner was hired to administer well-baby clinics throughout the county, and to provide educational information to parents. State and federal agencies, private organizations, and drug companies were contacted for donations of educational material to be given to pregnant women and for forms to be used in well-baby clinics.

Approximately 200 children were examined in the Well-Baby/Well-Child Clinics in Fiscal Year 1974. More than 500 contacts were made with expectant mothers by PEDIA staff members individually and through the pre-natal clinic or at the class for pregnant mothers held with the cooperation of Corsicana Independent School District. Of the women seen in the pre-natal clinic during the year, fifty-four percent received

services at the Well-Baby Clinic after delivery.

The PEDIA program coordinates its activities with Navarro County Memorial Hospital, Navarro County Consultation Center, the local Health Department, Department of Public Welfare, Planned Parenthood, local pharmacists, and local and county school personnel.

In POLK COUNTY, a Department of Human Resources was established to explore existing social service programs for children, provide public information and referral services, and operate two child care centers in Livingston and Corrigan. A contract signed with the Department of Public Welfare provides Title IV-A matching funds for the centers which serve predominantly current AFDC recipients. The DPW agreement also provides money for staff training through Stephen F. Austin State University. The Centers serve approximately 60 children and offer a comprehensive program including pre-school education, health and parenting education.

The SAN PATRICIO COUNTY project set up a system of 20 family day-homes throughout the county to serve approximately 70 children of working mothers. The San Patricio County Committee on Youth Education and Job Opportunities in Sinton provides the day-home operators with services which include licensing, training, physical examinations, equipment and supplies, and funds to upgrade physical facilities.

The coordinative efforts of the operating agency have generated Department of Public Welfare and San Patricio County funds for the program. Other agencies with which services are coordinated include the Little Folk School for training and the Coastal Bend Council of Governments for child advocacy.

In STARR COUNTY, the Community Action Council of South Texas was funded to operate the Starr County Early Childhood Development Program which provides comprehensive medical, dental and psychological treatment services for children.

From their central location in Rio Grande City, CACST staff directed and financed health services for 612 children in Fiscal Year 1974, and provided 459 of their parents with health training and consultation. Concurrently, the staff coordinated the delivery of health services with 34 other agencies.

THE SPECIAL PROJECTS

The TEXAS PANHANDLE Early Childhood Development and Training Program (T.P.E.C.D.T.P.) operated by the Texas Panhandle Community Action Corporation, provides support for five different centers in the Panhandle region. Through the combined efforts of the OECD sponsored program and the Labor Department's New Careers Program, the centers are provided technical assistance, community financial support, and with Amarillo College, training for child care workers.

During the 1974 program year, approximately 575 children received direct child care and health services with the help of T.P.E.C.D.T.P. staff. Approximately 863 parents were involved in parent training programs and counseling services initiated by T.P.E.C.D.T.P. As of September, 1974, 58 trainees had completed a one year on-the-job training program and received Child Care Specialist Aide certification from Amarillo College.

One objective of the project has been to stimulate support for the centers from the industrial community by providing day care for working mothers. Industry participation has included building grants, financial assistance, volunteer time and representation on local and regional boards.

The TEXAS MIGRANT COUNCIL, with funds provided by OECD, subcontracted with two non-profit organizations to provide day care for children of migrant families. The resulting projects include: (1) COASTAL BEND MIGRANT DAY CARE - 50 children receive education and health care in Corpus Christi, Taft and Mathis, Texas; (2) COLONIAS DEL VALLE Early Childhood Development Program - 60 rural children and their families in Hidalgo County receive comprehensive child care, health care, and parent education services.

The CORPUS CHRISTI Early Childhood Development Center is a program made possible through the cooperation of a number of local public and private agencies. The Coastal Bend Council of Governments serves as the administering agent, and services include comprehensive child care and parent education for approximately 60 children and their parents.

Child care activities are on-going and focus on social, emotional, physical and cognitive development in accordance with behavioral checklists for each age group. Parent education occurs on an individual and group basis, including a monthly family night supper at the Center.

Coordination efforts for child development expertise, training, and community support have been carried out with a number of different agencies.

The EL PASO Y.W.C.A. Community Day Care project operates a system of 10 child care centers which provide social, educational, health and parent involvement services for about 425 children. Through the combined efforts of OECD, the United Way of El Paso, HUD and DPW, this program was able to provide nearly $1 million worth of resources to El Paso children in Fiscal Year 1974.

In NACOGDOCHES, Project IMAGINE created a comprehensive infant care center for 24 children under age three that also includes parenting information and involvement. Besides child care, the children receive free medical examinations and any needed immunizations; parents receive parenting training and consultation from the staff.

With the Austin Heights Baptist Church as its operating agency, the program has combined at various times the coordinated efforts of eight other agencies, including Stephen F. Austin State University, Deep East Texas Council of Governments, the United Fund and the State Health Department.

DEMONSTRATION PROJECT HIGHLIGHTS
(Selected Descriptions of Project Activities)

QUARTERLY ACTIVITIES AT PEDIA (Taken from the narrative section of the quarterly MIS report)

Screens

During the quarter, 272 children were screened by the LVN and PNP. They were given physical examinations, were measured and had vital signs taken (height, weight, head circumference (infants), blood pressure, pulse, temperature), and were given the Denver Developmental Evaluation. These 272 children made 419 visits to the Child Health Service. Clinics are now county-wide, with county clinics held every Wednesday - twice a month in Kerens, once a month in Dawson, and once a month in Frost.

Referrals

Forty-six children were referred for various health reasons during the quarter. Thirty children were referred to physicians for diagnosis and treatment of health problems. Fourteen children were referred to the Health Department for immunizations. Two children were referred to Navarro County Consultation Center for evaluation and testing.

Treatment

One hundred and one women were treated at the Prenatal Clinic during 201 visits. This includes 35 new admissions to the clinic. Eight children which PEDIA referred to physicians were in need of treatment and PEDIA paid for this. One of these children had an inguinal hernia repair operation. PEDIA made the arrangements for this operation. The surgeon agreed to do the repair for $100, which the grandmother had saved for the operation, and the First National Bank Trust Department paid for the hospital costs through PEDIA.

AN INNOVATIVE PARENT EDUCATION PROGRAM AT COLONIAS DEL VALLE

The entire parent program at Colonias del Valle is strong, but in additon to the usual activities, they have something unique. They have started a training program for mothers who are not at a level where they would be eligible for regular employment training programs such as WIN. Many of the women who are parents in the Colonias program have a second grade

education or less and cannot meet the educational requirements of the training programs. To meet the needs of these women, formal topics, such as English and arithmetic, are offered along with "everyday psychology" and problem-solving to improve the parents' self-esteem and the ability to cope.

THE WIST CURRICULUM IN FALLS COUNTY

At child-care centers in Marlin, Rosebud and Lott, the Western Institute for Science and Technology conducts a structured developmental curriculum that is proving to be quite successful. Falls County had a problem of many six-year-old children not being ready for first grade. The children had not been exposed to formal pre-school and upon entering school their behavioral development was far behind that of other children who had been exposed to formal experiences or who came from other socio-economic levels. Poor performance on the Metropolitan Readiness Test given in the public school system resulted in many children being assigned to a special education track from which it is very difficult to move into the mainstream of the education process.

On an experimental basis, WIST introduced a multi-faceted educational program at the Marlin Center. The program includes social development, physical development, creative development and intellectual development features; it is presently available to all the children at centers in Marlin, Lott and Rosebud.

Pre-test and post-test results for the original three-year experiment indicate that significant progress is being made. Students who went through the day care program were given the California Achievement Test at the end of their first and second years. On a percentage basis, these students scored higher than the average grade level in reading and mathematical skills and in other areas of cognitive development.

DO MOTHERS WHO RECEIVE CHILD CARE FIND WORK?

Mothers of children in San Patricio Early Childhood Development Program are making a significant contribution to family income. As part of the survey of family income change for this report, the following employment characteristics were obtained from San Patricio showing how family employment conditions changed over the sample period.

Family 1	
9-17-74	2 children; Father working as school janitor
3-14-75	Father same; Mother working for DuPont. Family income up.
Family 2	
6-8-74	7 children; Father working as painter
3-14-75	Father unemployed; Mother working in grocery store. Family income up.
Family 3	
12-30-74	4 children; Father working for Refinery
3-14-75	Father same; Mother working for Post Office. Family income up.
Family 4	
10-14-74	3 children; Father works for moving company
3-14-75	Father not in home; Mother working for Texas Employment Commission. Family income stable.
Family 5	
4-29-74	5 children; Father in prison; Mother working in liquor store
3-14-75	Same. Family income up.
Family 6	
1-20-75	4 children; Mother divorced and on welfare
3-14-75	Mother works for county commissioner. Family income up.
Family 7	
9-10-74	5 children; Mother works as maid; Father ill
3-14-75	Same. Family income stable.
Family 8	
11-11-74	1 child; Father unemployed; Mother is office worker
3-14-75	Same. Family income up.

LAMAR COUNTY EARLY CHILDHOOD DEVELOPMENT PROGRAM GROWS BY LEAPS AND BOUNDS

The Lamar County ECD Program initiated its activities in September, 1973, with seven children enrolled. Today, the program claims an enrollment of about 170 children in four centers across the county. The program director emphasizes that the centers are open to any child in Lamar County "whether they (the child's parents) have absolutely no income or more income than they know what to do with."

All the centers offer half-day pre-school programs serving three, four and five year olds. The Oak Park Center in Paris and Delmar Center offer day care programs. Newly offered this year is a pre-school enrichment program at Powderly, and kindergarten at the Oak Park location.

The County program is designed to offer services in five separate but related fields: pre-school enrichment, day care services, recreation, parent education and health services. These areas were decided upon as a result of a four-month planning period prior to the actual beginning of program activities. During that four-month period, county organizations, individual parents, ministers, child welfare personnel and others were consulted on the early childhood needs of the county.

The pre-school enrichment portion of the program at the Oak Park Center includes creative play, homemaking, science, art, library and "show-and-tell". Children have been visited by local sheriff's department personnel and nursing students from Paris Junior College. The day care services are offered from 6:30 a.m. to 5:15 p.m. at the centers, and a child's schedule may be arranged to fit his family's needs.

The recreation aspect of the program is highlighted by a "model playground" completed at Oak Park and under construction at the other centers. The playground equipment was designed by a day care consultant associated with the Department of Public Welfare.

The parent education program provides group meetings open house, and consultation and referral if necessary. A periodical newsletter is published providing general community information.